

**EOC Goal 1.02 Review**  
**Formulas/Algebraic Expressions**

1. The formula  $V = \pi r^2 h$  is used to find the volume of a cylinder. If a cylinder has a volume of  $62.8 \text{ in}^3$  and a height of 5, what is its radius?
2. Four friends were born in consecutive years. The sum of their birth years is 7798. In what year was the oldest of the four friends born?
3. The perimeter of a rectangle is 116 cm. The length is 10 cm greater than twice the width. What is the length of the rectangle?
4. The volume of air an adult's lungs can hold decreases with age. The formula  $V = 0.104h - 0.018a - 2.69$  estimates air volume  $V$  (in liters) of a person's lungs for someone of height  $h$  inches and age  $a$  years. How old is the individual that is 72in. in height and whose lungs can hold 4.36 liters of air?
5. Suppose that you sell shoes and get a 5% commission on your sales. Last week, your paycheck included \$24.71 in commissions. Use the formula  $C = 0.05s$  to determine how much you made in sales.

Use the formula  $SA = 2\pi rh + 2\pi r^2$  (surface area of a cylinder) to answer 6 – 7.

6. Find the surface area of a cylinder with  $r = 3\text{ft.}$  and  $h = 10\text{ft.}$
7. Find the height of a cylinder with  $SA = 5428.67\text{cm}^2$  and  $r = 8\text{cm}$

Use the formula  $SA = b^2 + 2bl$  (surface area of a square pyramid) to answer 8 – 9.

8. Find the surface area of square pyramid with  $b = 12\text{mm}$  and  $l = 10\text{mm}$
9. Find the length of a square pyramid with  $SA = 28,000\text{m}^2$  and  $b = 100\text{m}$

10. Costs for bowling at a certain bowling alley are \$2.50 for shoes and \$4.25 for each game bowled. Austin spent \$15.25. Write and solve an equation to find how many games he bowled.
11. A state park charges admission of \$6 per person plus \$3 for parking. Joan paid \$27 when her car entered the park. Write and solve an equation to find the number of people in Joan's car.
12. Ohm's Law states that in an electrical circuit  $E = IR$ , where  $E$  represents the potential in volts,  $I$  represents the current in amperes, and  $R$  represents the resistance in ohms. Find  $R$  if  $E = 6$  and  $I = 40$ .